



Australian Bureau of Statistics

1383.0.55.001 - Measures of Australia's Progress: Summary Indicators, 2009

ARCHIVED ISSUE Released at 11:30 AM (CANBERRA TIME) 30/04/2009

This feature article was first released as part of Measures of Australia's Progress 2006 (ABS cat. no. 1370.0). All page references refer to the original publication.

SOME INTERNATIONAL COMPARISONS

INTRODUCTION

Measures of Australia's Progress (MAP) presents information on a range of issues that are of concern or interest to Australia and Australians. We can gain a greater understanding and an additional insight into Australia's progress by comparing our progress with that of other countries. Comparing Australia's progress with that of other countries allows us to make our own individual assessment of how particular aspects of life in Australia compare with those in other countries.

International comparisons for each of the headline indicators, or where an international comparison for the headline indicator is not available, a closely related indicator, are presented in the commentary for each of the dimensions, so are not repeated here.

This essay compares aspects of Australia's progress with that of other countries in the Organisation for Economic Cooperation and Development (OECD). Information about a range of progress dimensions – *Health; Education and training; National income; National wealth; The natural landscape; and Governance, Democracy and Citizenship* – is presented. A core set of countries are included in each comparison – Canada, Italy, Japan, New Zealand, the UK and the USA – together with the highest and lowest performing OECD member states in each area. Most of the data used here come from the OECD.

The essay also draws out the relationship between the selected indicators and the headline indicators for these dimensions where applicable.

There are difficulties in drawing comparisons between countries. Perceptions of progress may differ between countries. An indicator that is viewed as key to progress in one country may be considered less important in another country.

Data comparability is an issue for international comparisons. For some indicators, say life expectancy at birth, where there is an agreed international definition, comparisons are most valid. For other indicators, say crime rates, differences might be influenced by compiling practices, or differences in law. For other indicators, say the number of people with degrees, differences might be influenced by university curriculum standards.

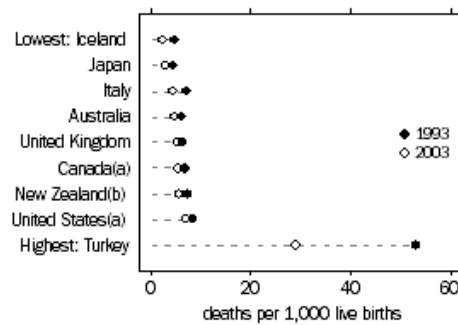
There are other factors that complicate statistical comparisons between countries. While there are agreed concepts, definitions and classifications for some data items collected, for many others the concepts, definitions and classifications used will vary. The time at which particular data are collected can also vary considerably between countries so it can be difficult to make an international comparison for a set point in time. This can be particularly so for less frequently collected data.

HEALTH - INFANT MORTALITY

Infant mortality is an indicator of the quality of a nation's antenatal care, the effectiveness of its obstetric services and the quality of its infant care in hospitals and the community.¹ The infant mortality rate is also indicative of socio-economic conditions in a country. The infant mortality rate is expressed as the number of deaths of children under one year of age expressed per 1,000 live births.

Infant mortality is closely related to the MAP headline indicator for *Health*: life expectancy at birth. A high infant mortality rate can lower average life expectancy, while a low infant mortality rate can contribute to increased average life expectancy. An international comparison for life expectancy at birth is presented in the *Health* commentary on page 34.

Infant mortality rate



(a) Data are for 2002 not 2003. (b) Data are for 2001 not 2003.

Source: *OECD in Figures 2005*.³

In 2003, the infant mortality rate in Australia was around the median for the OECD at 4.8 per 1,000 live births. However, the infant mortality rate is not consistent for all population groups in Australia. The infant mortality rate for Indigenous Australians is three times the rate for non-Indigenous Australians for the period 1999–2003.² In keeping with this, higher infant mortality rates are also observed in rural and remote areas, and in areas characterised by higher levels of disadvantage.¹

The OECD country with the lowest infant mortality rate in 2003 was Iceland with a rate of 2.4 per 1,000 live births. All of the other Nordic countries (with the exception of Denmark) which have historically had low infant mortality rates, were among the five OECD countries with the lowest infant mortality rates in 2003. The two countries with markedly higher infant mortality rates than any other OECD countries were Turkey and Mexico with infant mortality rates of 29.0 per 1,000 live births and 20.1 per 1,000 live births respectively.

Given its wealth and level of development, the United States has a relatively high infant mortality rate at 7.0 per 1,000 live births, the fifth highest rate in the OECD. Factors such as the high level of teenage pregnancy and lack of free prenatal and perinatal care in the United States have been suggested as contributory factors underlying the higher observed infant mortality rate.⁴

During the decade between 1993 to 2003, Australia achieved a 21% reduction in infant mortality rate, from 6.1 to 4.8 per 1 000 live births. The introduction of a public education campaign about Sudden Infant Death Syndrome (SIDS) in the early 1990s has been successful in contributing to a substantial reduction in deaths from SIDS. Consequently, recent reductions in the infant mortality rate have been due to better treatment and the implementation of interventions such as the promotion of a prone sleeping position to prevent SIDS.¹

All OECD countries achieved reductions in their infant mortality rate in the period between 1993 and 2003. The Czech Republic, Portugal and Iceland all at least halved their infant mortality rate during this period. Infant mortality in the Czech Republic went from 8.5 to 3.9 per 1 000 live births, in Portugal from 8.7 to 4.1 per 1,000 live births and in Iceland from 4.8 to 2.4 per 1,000 live births.

Considering change over a longer period, Japan has achieved a very substantial decrease in its infant mortality rate from 30.7 per 1,000 live births in 1960, to 3.0 in 2003. Japan has changed from a country previously in the bottom half of OECD countries in terms of infant mortality rates in 1960 to currently being one of the countries with the lowest rates, along with the historically low Nordic countries.⁴

EDUCATION AND TRAINING - AT LEAST UPPER SECONDARY EDUCATIONAL ATTAINMENT

Education plays a key role in contributing to the economic prosperity of the nation. Education also contributes to the social fabric of a society, and helps shape the values and norms of that society. At the individual level, education helps provide the capacity for individuals to reach their full potential in an academic, professional, economic and personal sense.

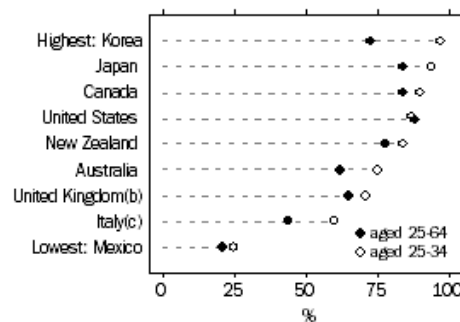
One educational attainment indicator is the proportion of 25–64 year olds who have completed at least upper secondary education. This indicator is presented in this essay along with the proportion of 25–35 year olds who have completed at least upper secondary education.

While the MAP headline indicator for education focuses on the proportion of people with a vocational or higher education qualification (an international comparison for this indicator is presented on page 46), the proportion of

the population who have completed at least upper secondary school education is also useful as an indicator for education and training. Completion of upper secondary education is sometimes a prerequisite for entry into higher education and increasing numbers of young people are completing upper secondary school education, increasing the pool of people potentially eligible to undertake and complete a higher education qualification. Further in Australia some vocational qualifications are regarded as a lower level of attainment than the completion of upper secondary school.

Focussing on the attainment of people aged 25–64 gives an indication of whether completion of upper secondary school education has been the norm in a particular country for past generations. Focussing on the attainment of the population aged 25–34 is indicative of generational change for the younger age cohort. These indicators also provide some sense of the skills available in the population and labour force.

Educational attainment: at least upper secondary level^(a) - 2003



(a) The OECD definition of at least upper secondary level education corresponds to the final stages of secondary education and above. In the Australian context, this includes completion of Years 11 or 12 of secondary school, Certificate III or IV, Diploma, Advanced Diploma, Bachelor Degree or above. Refer to The International Standard Classification of Education: ISCED 97, UNESCO, Paris, 1997 for more details.

b) Includes some ISCED 3C short programmes. (c) Data are for 2002.

Source: *OECD Education at a Glance 2005*.⁵

In 2003, the rate of completion of at least upper secondary education in Australia for the population aged 25–64 years was 62%, slightly below the OECD average of 66%. The rate for 25–34 year olds was 75%, equivalent to the OECD average.

In 2003, the OECD country with the highest proportion of 25–64 year olds who had completed at least upper secondary education was the United States (88%). The Slovak Republic (87%), Norway (87%) and the Czech Republic (86%) had the next highest proportion of people with at least upper secondary educational attainment.

Korea had the highest proportion of 25–34 year olds with at least upper secondary school educational attainment (97%). Mexico had the lowest rate of upper secondary school attainment for both 25–64 year olds (21%) and 25–34 year olds (25%). Attainment of at least upper secondary education was also relatively low in Portugal and Turkey, with attainment rates of 23% and 26% for the population aged 25–64.

The completion of at least upper secondary school is increasing in almost all OECD countries. This is having a flow-on effect as the proportion of 25–34 year olds who had completed at least upper secondary education was higher in every country, with the exception of the United States, than for the population aged 25–64. The growing skill requirements of labour markets, an increase in unemployment in a number of countries in recent years, and higher expectations among individuals have contributed to an increase in the proportion of young people who obtain a higher education qualification (and therefore complete upper secondary school).⁵

In 2003, in OECD countries with high levels of at least upper secondary school attainment, the difference in education attainment between the 25–34 year old age group and the population aged 25–64 years was relatively small. This reflects a longer tradition of at least upper secondary school educational attainment in these countries. This was most noticeable in the Czech Republic, the Slovak Republic, Norway and Canada. The exception to this pattern was in Korea where 97% of 25–34 year olds had completed at least upper secondary education compared with 73% of the total population (25–64 year olds).

NATIONAL INCOME - CONSUMPTION EXPENDITURE

Final consumption expenditure is a key indicator of the economic wellbeing of a population as it provides a measure of the level of goods and services a society is able to consume to meet their needs and wants. Households, including those non-profit institutions that serve households, and governments are the ultimate (final)

consumers of goods and services within an economy. Household purchases of goods and services constitute the largest part of final consumption expenditure. Governments and non-profit institutions serving households generally provide a range of services to households either for free or at a low price. The cost to the government or the non-profit body that provides these services, in delivering these services, is also an important part of total final consumption expenditure.

Actual individual consumption (comprising household final consumption expenditure and government final consumption expenditure on individual goods and services) is a significant component of Gross Domestic Product (GDP). GDP is a measure of the economic value of production of those activities that fall within the boundary of the National Accounts system. There is an important relationship between GDP and household consumption expenditure.¹⁰

Actual individual consumption

Actual individual consumption is the total value of household final consumption expenditure, and government final consumption expenditure on individual goods and services.⁶

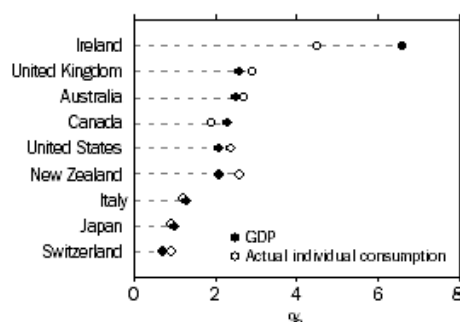
Household final consumption expenditure is the market value of all goods and services, (including durable products such as cars, washing machines, and home computers), purchased by households.⁷ Household final consumption also includes the value of goods and services produced by non-profit institutions serving households.⁷

Government final consumption expenditure is current expenditure by general government bodies on collective services such as defence and public order and safety which are consumed by the community as a whole, and on individual goods and services such as health and education which are consumed by individuals. Only that government expenditure on individual consumption goods and services is included in actual individual consumption. Transfer payments such as social assistance benefits are not included.⁸

Household final consumption expenditure and government final consumption expenditure on individual goods and services are also closely related to real net national disposable income. As disposable income increases, so does the capacity for households to purchase additional goods and services, and for government to provide goods and services. For more detail, see the international comparisons for Gross National Income and growth in GDP on page 64, and the headline indicator for *National Income*: Real Net National Disposable Income on page 60.

The indicator presented here is actual individual consumption per capita, divided into its two components – household final consumption expenditure and government final consumption expenditure on individual goods and services, both expressed in US dollars. The average annual growth in GDP per capita between 1994 and 2004 is also presented in the following graph to show growth in actual individual consumption against growth in GDP.

Average annual growth in GDP and individual consumption expenditure^(a) - 1994 to 2004



(a) Calculated using GDP and actual individual consumption estimates expressed as US dollars at constant prices and constant PPPs.

Source: Calculated from National Accounts of OECD Countries, OECD Statistics On-line Database, 2006.⁹

In 2004, Australia's actual individual consumption per capita was \$23,200, which was above the OECD average of \$21,000. This comprised household final consumption expenditure of \$19,000, and government final consumption expenditure on individual goods and services of \$4,200.

Luxembourg had the highest level of actual individual consumption per capita (\$31,500) of all OECD countries in 2004. The United States had the highest per capita level of household final consumption expenditure (\$27,900), while Luxembourg had the highest level of per capita government final consumption expenditure on individual goods and services (\$8,300). Turkey had the lowest actual individual consumption per capita (\$5,600), made up of household final consumption expenditure of \$5,000 and government final consumption expenditure on individual

goods and services of \$600.

In 2004, the level of actual individual consumption per capita in most OECD countries was closely related the level of GDP per capita. Countries with relatively high levels of GDP per capita such as Luxembourg, the United States and Norway also had relatively high levels of actual individual consumption per capita. Countries with low levels of GDP per capita such as Turkey, Mexico and Poland recorded the lowest levels of actual individual consumption. This pattern was also observed for household final consumption expenditure, which is the major component of actual individual consumption.

The level of government final consumption expenditure on individual goods and services in OECD countries is more likely influenced by factors such as government policy and societal attitudes to government spending than by the level of GDP. Sweden, a country with a moderately high level of GDP per capita in 2004 (\$31,100), has a tradition of a high level of government provision of goods and services. In keeping with this Sweden had a relatively high level of government final consumption expenditure on individual goods and services in 2004 (\$7,200). In contrast, the United States with a higher level of GDP per capita in 2004, (\$39,700) is a country with societal expectations that individuals bear a much greater share of the provision of goods and services. The United States had a relatively low level of government final consumption expenditure on individual goods and services (\$2,500) in 2004.

As GDP increases, consumption expenditure also tends to increase. Increases in actual individual consumption per capita in OECD countries in the period between 1994 and 2004 generally reflected the magnitude of increases in GDP per capita. Countries that experienced high average annual rates of growth in GDP per capita such as Ireland (6.6%), Poland (4.5%) and the Slovak Republic (4.2%) also had substantial average annual growth in actual individual consumption per capita (4.5%, 4.0% and 4.9% respectively).

Countries with lower annual average growth in GDP per capita during the period 1994–2004 such as Switzerland (0.7%), Japan (1.0%) and Mexico (1.1%) experienced lower growth in actual individual consumption per capita (0.9%, 0.9% and 1.0% respectively). However, despite relatively low per capita growth in GDP and actual individual consumption, Japan experienced one of the highest average annual rates of growth (3.1%) in government final consumption expenditure on individual goods and services, the smaller component of actual individual consumption.

While increases in consumption expenditure generally reflected increases in GDP in the period between 1994 and 2004, the average annual rate of growth in actual individual consumption per capita was lower than the rate of growth in GDP per capita in more than half of OECD countries.

However, there were a number of OECD countries where average annual growth in individual actual consumption expenditure per capita during this period was somewhat greater than growth in GDP per capita. For example, in the Slovak Republic actual individual consumption per capita grew on average by 4.9% and GDP by 4.2%. In Norway actual individual consumption per capita grew on average by 3.1% and GDP by 2.4%, and Iceland where individual actual consumption per capita grew by 3.2% and GDP by 2.7%.

Between 1994 and 2004 actual individual consumption per capita in Australia grew on average by 2.7% per year while GDP per capita grew by 2.5%. Australia's growth in both GDP per capita and actual individual consumption per capita was above the OECD average.

NATIONAL INCOME - HOUSEHOLD SAVING

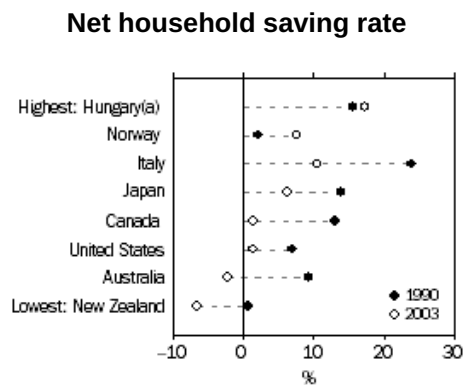
Household saving is one of the main sources of funds within a country to finance investment, and hence, to promote long-term growth in increased national disposable income per capita. An international comparison for a related indicator, Gross National Income per capita is presented in the *National income* commentary on page 64.

Household saving and investment represents the wealth accumulated by households, which is a component of national wealth.

Household saving is also important at the individual or family level. Saving for retirement recognises that income levels fluctuate over the life cycle, and that provision needs to be made for the time after an individual retires from the labour market. The wealth households have accumulated through saving and investment represents the wealth that can be used to generate future income and support future consumption.

Household saving is the component of household disposable income that is not consumed. The household saving rate is household saving divided by household disposable income. Household saving rates can be calculated as either a gross saving rate or net saving rate (see definitions of gross and net saving in the *National income* commentary on page 63). Many OECD countries, including Australia, calculate household saving on a net basis. The net household saving rate is the measure presented in this essay, and hence countries using gross saving

rates such as the United Kingdom, Belgium and Sweden have been excluded from this analysis.



(a) Data are for 1995, not 1990.

Source: OECD Factbook 2005.⁴

In 2003, Australia experienced a household saving rate of -2.2%. This negative saving rate was the result of both a slow down in the rate of growth of disposable income and the continued strength of household final consumption expenditure.¹¹ In 2003, New Zealand also experienced negative household saving or dissaving (-6.5%), making it the lowest household saving rate of all OECD countries. In 2003, Hungary had the highest household saving rate of all OECD countries, with 17.3% of household disposable income being saved.

Many OECD countries experienced a decline in household saving during the period 1990–2003. Australia, Canada, the United States, New Zealand and Finland all experienced sharp declines in household saving rates. Australia's household saving rate of -2.2% reflects a decline from 9.3% in 1990. However, in understanding the fall in Australia's household saving it is important to consider changes in the value of assets held by households.¹¹

Norway experienced the strongest growth in the household saving rate during the period 1990–2003, with household saving increasing from 2.2% to 7.6% of disposable household income during this period.

Factors that may influence the household saving rate include the legal and administrative arrangements within a country and the demographic characteristics of the population. The extent to which governments fund old-age pensions and provide insurance against unemployment and sickness may also influence the level of household saving.

The age composition of the population can influence the level of household saving. An ageing population may be accompanied by lower household saving rates as older people tend to run down the financial assets that they have accumulated during their working life.⁴ Countries with an ageing population and low fertility rates also experience a slow down in the rate of household formation, meaning less growth in the number of households to contribute to the household saving of a country. The purchase of household durables (such as washing machines, refrigerators etc), which households may consider to be an investment can also influence the level of household saving.¹²

NATIONAL INCOME - POPULATION IN WORK

The proportion of the working age population (aged 15–64) who are employed provides information on the ability of the economy to create jobs.¹³ The size of the economically active population is also one of the determinants of economic growth. A limitation of this indicator is that it does not take into account those in employment who are older than the age that has traditionally been considered working age.

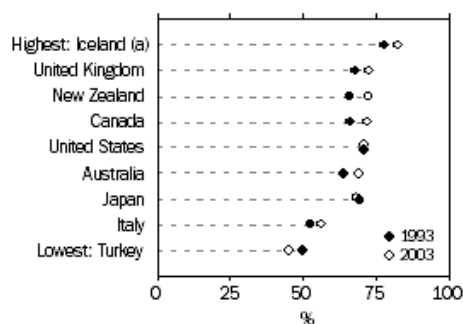
A high ratio means that a large proportion of the working age population is employed, while a low ratio means that a large share of the working age population are not directly involved in productive market activities, because they are either unemployed or more likely not in the labour force. This is the pool of people who potentially can be targeted by labour market policies to increase employment and participation. While a high employment to working age population ratio is generally considered positive, the indicator alone does not provide information on labour market issues such as under employment, earnings and working conditions.¹³

The employment to working age population ratio is influenced in the short term by business cycles and the level of unemployment. Higher unemployment, all other things equal, will tend to decrease the employment to working age population ratio. An international comparison for unemployment rate is presented in the *Work* commentary on page 52.

However in the longer term, the population of working age people who are employed is affected by policies in

areas such as higher education, income support, and policies that facilitate the employment of women.⁴

Employment to working-age population ratio



(a) Data are for 2002 not for 2003.

Source: *OECD Factbook 2005*.⁴

In 2003, Australia's employment to working age population ratio was 69%, above the OECD average of 65%. Iceland was the OECD country with the highest employment to working age population ratio in 2003, with 83% of the working age population in employment, followed by Switzerland with 78%. Along with Iceland, most of the other Nordic countries had relatively high ratios in 2003: Norway (76%), Denmark (75%), and Sweden (74%). This is due in part to the continuing high level of participation of women in paid employment in these countries.

Turkey had the lowest employment to working age population ratio (46%), followed by Poland (51%). High unemployment in Poland in recent years, attributed to rationalisation of the economy, relatively slow development of the services sector, and the level of labour market regulation, is likely to have contributed to the low ratio in that country.¹⁴ In Turkey, participation of both men and women in paid work has been declining. This, in combination with the continuing low proportion of women in paid work (25%), are factors likely to have contributed to the low ratio.

The employment to working age population ratio increased in the majority of OECD countries during the period between 1993 and 2003, along with economic growth. For further information on economic growth, see the international comparisons of change in GDP, and gross national income in the *National income* commentary on page 64.

In Australia, the employment to working age population ratio increased from 64% to 69% between 1993 and 2003. This increase was driven by increasing female participation in paid work, with male participation in paid work actually declining during this period.

The largest increases in the ratio occurred in occurred in Spain, Ireland and the Netherlands. The employment to working age population ratio in Spain increased from 48% to 61%, in Ireland from 51% in 1993 to 65% in 2003, in and from 64% to 73% in the Netherlands. The increases in these countries were driven by substantial growth in the proportion of women in paid employment, and also in Ireland by substantial economic growth over this period.

Substantial decreases in the employment to working age population ratio occurred in Poland and Turkey during the period between 1993 and 2003. In Turkey the decline was from 50% to 46% , while in Poland from 59% to 51%.

BIODIVERSITY - PROTECTED AREAS

Conservation of biodiversity is considered an integral part of sustainable development. Many are concerned about the impact of human activities on biodiversity. Human activities impact on biodiversity in ways such as habitat alteration, pollution, introduction of exotic species, commercial use of wildlife resources, degradation of ecosystems, loss of habitat, and the extinction of plant and animal species.¹⁵

Protected areas are a cornerstone of national biodiversity conservation strategies. They provide safe havens for the protection of plant and animal species. Protected areas also help to preserve genetic diversity of species, and preserve ecosystems, and in doing so help ensure the survival of the world's natural heritage. They also maintain vital ecosystem functions such as the regulation and purification of water flow. Protected areas are also important sites for scientific research and conserving biodiversity.

Protected areas provide places for indigenous human communities to continue traditional lifestyles. They provide protection for sacred sites, and are places for tourism, recreation and education. They are believed to act as natural buffers against climate change through the uptake and storage of carbon by forests.

Protected areas

The protected areas indicator is expressed as the proportion of land territory that is in protected areas. The proportion of land territory in strict nature reserves, wilderness reserves and national parks is also presented.

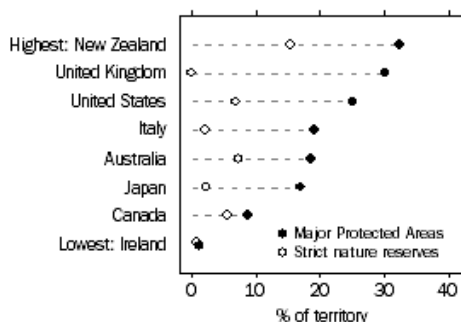
The World Conservation Union (IUCN) defines a protected area as "an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means." The IUCN provides six categories of protected areas according to the management regime of the area, ranging from a strict nature reserve where limited access is available to scientists only, to a managed resource protection area, which is managed for the sustainable use of natural ecosystems.¹⁶

Sea territory in protected areas is not included in this indicator. Globally less than 1% of marine environment is included in protected areas. Australia's Great Barrier Reef is one of two sites that accounts for a third of the global area of the marine environment in reserves. Marine protected areas help provide fish breeding grounds and maintain fisheries.¹⁶

Protected areas are set up with the conservation of species as one of the primary objectives. Therefore the proportion of a territory that is in protected areas reflects political and societal commitment to biodiversity conservation.¹⁷ However, the proportion of territory in reserves has limitations as an indicator of biodiversity conservation. The proportion alone does not tell us what range of ecosystems and habitats are being preserved in protected areas.

Changes over time in the number of extinct, endangered and threatened mammal and bird species is indicative of how well the strategies for the conservation of biodiversity, of which protected areas are a key part, are operating. International comparisons of threatened mammal species and threatened bird species is presented in *The natural landscape – biodiversity* on page 107.

Major protected areas and strict nature reserves^(a) - 2004



(a) Strict nature reserves includes the following IUCN categories Ia: strict nature reserves managed mainly for science, Ib: wilderness areas managed mainly for wilderness protection, and II: national parks managed mainly for ecosystem protection and recreation.

Source: *Environment at a Glance, OECD Environmental Indicators 2005*.¹⁵

The number and extent of protected areas has increased globally, in almost all OECD countries. While in 1962 there were around 10,000 protected areas, there are now over 100,000.¹⁶ In 2004, there were 5,700 sq km of protected areas in OECD countries accounting for 16% of the total territory of all OECD countries combined.

In 2004, protected areas accounted for 19% of Australian territory. This placed Australia in the top third of OECD countries in terms of area in reserves.

In 2004, New Zealand was the OECD country with the highest proportion of its territory dedicated to protected areas (32%). Other OECD countries with greater than 30% of their territory in protected areas were Germany (32%) and the United Kingdom (30%). Ireland had the lowest proportion of territory dedicated to protected areas (1%). Other countries with less than 5% of territory in protected areas were Belgium (3%) and Turkey (4%).

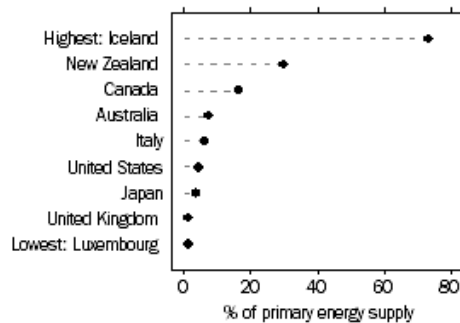
New Zealand had the highest proportion (15%) of territory in strict nature reserves, wilderness areas and national parks in 2004. There were five other OECD countries with greater than 5% of territory in strict nature reserves, wilderness areas, and national parks: Sweden (8%), Australia (7%), Slovak republic (7%), United States (7%) and Canada (6%). In contrast, the United Kingdom, Luxembourg, Korea and Belgium did not have any territory in these categories of protected areas.

AIR AND ATMOSPHERE - RENEWABLE ENERGY

Increasing the use of renewable energy sources has the potential to help reduce greenhouse gas emissions. Australia's net greenhouse gas emissions are the headline indicator for *The air and atmosphere*. An international comparison for a related indicator, net greenhouse gas emissions is presented on page 137.

Governments around the world are recognising the importance of sustainable development and combating climate change when designing their energy policies.⁴ The use of renewable energy is part of energy policy responses to address climate change in many countries. Renewable energy includes wind, solar, hydro, geothermal, tide and wave. It also includes energy derived from biomass and from the combustion of industrial and municipal waste. In the 26 OECD countries that are members of the International Energy Agency, combustible renewables and waste, and hydropower currently represent the bulk of renewable energy supply.¹⁶

Renewable energy as a proportion of primary energy supply - 2003



Source: OECD Factbook 2005.⁴

In 2003, 8% of Australia's primary energy supply came from renewable energy sources, above the OECD country average of 6%. Australia has vast reserves of low-cost energy resources and is a major energy exporter, particularly of coal.¹⁸

Primary energy supply in Australia is dominated by fossil fuels, with coal accounting for nearly half of total primary energy supply. Given this, the Australian government has determined that the development of low emissions technologies such as "clean coal" will be a central focus of climate change policy in Australia.¹⁹

Around three quarters of renewable energy used in Australia comes from biomass, with hydropower accounting for most of the remainder. There is also a small contribution from wind power and solar.¹⁸ Australia has set a mandatory target of generating an additional 9,500 giga watt hours (GWh) of electricity per year from renewable sources by 2010. This is enough power to satisfy the residential electricity needs of 4 million people. There are a variety of government programmes that provide support for renewable energy innovation, development and commercialisation.²⁰

In 2003, 73% of Iceland's total primary energy supply came from renewable energy sources (primarily geothermal), the highest proportion of all OECD countries. This was markedly higher than the next highest proportions of primary energy supply – in Norway (44%) and New Zealand (30%). The share of renewable energy supply in total primary energy supply is strongly linked to a country's resource endowments. It is also determined by technology development, policy choices and private sector investment. In Norway there are abundant hydropower resources that provide almost all of its electricity generation, and represent the bulk of renewable energy sources in Norway. However, there is also interest in expanding the use of wind power and heat from biomass. In New Zealand there are abundant geothermal and hydropower resources and these account for the bulk of renewable energy, together with some use of biomass.¹⁸

In 2003, there were eleven OECD countries where the source of 10% or more of total primary energy supply was from renewable energy. This was unchanged from nearly a decade earlier in 1994.

There were seven OECD countries where in 2003 less than 2% of total primary energy supply came from renewable sources (Hungary, Belgium, Ireland, Korea, Netherlands, the United Kingdom and Luxembourg). Total primary energy supply in these countries is also dominated by fossil fuels. Nuclear energy also plays a part in fulfilling energy needs in all of these countries (with the exception of Ireland and Luxembourg), particularly so in Belgium, Hungary, and Korea.¹⁵

However, around half of OECD countries experienced an increase in the proportion of their energy supply coming from renewable energy between 1994 and 2003. In some of these countries the increase was relatively small, or was from a small base. Australia increased use of renewable energy from 6% of primary energy in to 8% over this period.

Some OECD countries that were already making considerable use of renewable energy sources in 1994 increased their use of renewable energy in the period from 1994 to 2003. During this period Iceland increased its use of renewable energy from 66% to 73%, Sweden from 23% to 26%, and Finland from 19% to 22%. Denmark experienced a marked increase in renewable energy use over this period, from 8% of primary energy supply to 13%.

ENVIRONMENT - MUNICIPAL WASTE

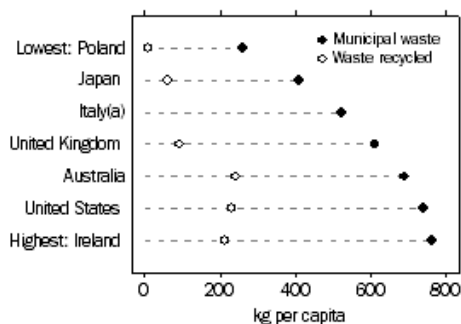
Waste is generated at all stages of human activities. The volume of waste that a society produces is an indicator of resource use and of the by-products of consumption, and is determined by production and consumption patterns. The potential impacts from inappropriate waste management on human health and the environment (soil and water contamination, air quality, land use, landscape amenity, greenhouse gas emissions from landfill) are major concerns.⁸

Increasing waste generation challenges the capacity of current facilities to cope, and creates pressure for land on which to locate new waste disposal facilities. The location and social acceptance of new facilities, such as landfills, is also an issue. There is a recognition that waste minimisation through changes in consumption patterns and waste prevention, reuse, recycling and recovery, is an element of sustainable development and policy responses have focussed on strategies in these areas.

Municipal waste

The municipal waste indicator is expressed as municipal waste generated (kg/capita) per year and the amount of this waste that is recycled. Municipal waste is waste collected by or on the order of municipalities. It includes waste that originates from households, commercial activities, office buildings, institutions such as schools and government buildings, and small businesses that dispose of waste at the same facilities used for municipally collected waste.⁸

Municipal waste per capita - 2003



(a) No data are available for waste recycled.

Source: *Environment at a Glance, OECD Environmental Indicators 2005*.¹⁵

In 2003, Australia had the fifth highest rate of per capita municipal solid waste generation among OECD countries with 690kg per capita. This is partly because technologies and processes to avoid, reduce and recover waste are generally not used as extensively in Australia as in some other OECD countries.¹⁹

In 2003, the OECD country with the highest per capita generation of municipal solid waste was Ireland, producing 760kg of waste per capita. The United States and Iceland had the next highest rates of per capita municipal waste generation with 740kg and 730kg respectively. The OECD country with the lowest per capita municipal solid waste generation was Poland with 260kg per capita. The Czech Republic and Slovak Republic were the next lowest generators of municipal solid waste, with 280kg per capita and 300kg per capita respectively. Data for 2003 shows that the OECD countries with relatively high levels of consumption also had relatively high levels of municipal waste generation.

For the 20 OECD countries for which data exists on the change in municipal solid waste generation between 1990 and 2003, all but four countries recorded increases in municipal solid waste generation per capita. The largest increases were in Ireland and Spain, which recorded increases of 76% and 53% respectively, compared with the

levels of municipal solid waste in 1990. Municipal solid waste generation intensity per capita has risen mostly in line with private final consumption expenditure and GDP, although a slight slow down has been observed in recent years.¹⁵

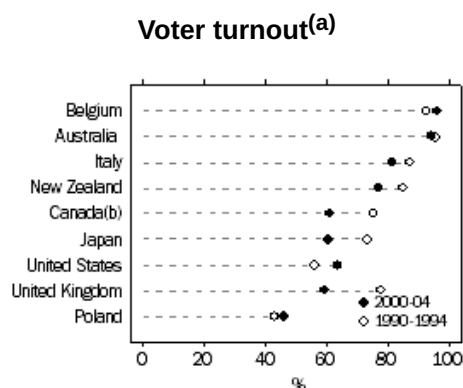
Recycling, incineration and energy recovery from waste are becoming more commonly utilised in a number of OECD countries. Nine European OECD countries and Japan now dispose of less than 30% of their waste to landfill, with Switzerland and Japan sending only 1% and 5% of their waste to landfill respectively. In Japan it has been a government priority to minimise the generation of waste and reduce landfilling, by means of recycling and combustion to generate electricity.²²

In 2003, Australia ranked tenth in terms of the proportion of municipal solid waste that is recycled, with 35% of waste being recycled. Four OECD countries recycle more than half of their municipal solid waste, Austria (61%), Belgium (60%), Germany (56%) and the Netherlands (56%). The relatively high cost of landfill in Europe, the prohibition of biodegradable and combustible material from landfill and renewable energy targets are factors likely to have encouraged greater use of recycling and energy recovery from waste.²¹

GOVERNANCE, DEMOCRACY AND CITIZENSHIP - VOTER TURNOUT

In most developed democratic countries there is concern about increasing public alienation from politics.^{22, 23} Voter turnout rates are one easily quantifiable measure of political participation of the population. Voter turnout can be considered as an indicator of the extent to which citizens are a part of the political process, and the confidence the population has in, and importance they attach to, political institutions. However, higher or lower rates of voter turnout do not necessarily correlate with the characteristics or extent of democracy within a particular country.

There are a couple of methods by which the voter turnout rate can be expressed. Voter turnout can be expressed as the number of votes cast divided by the number of registered voters for a parliamentary election. It is also possible to express the indicator as the number of votes cast as a proportion of the voting age population. The Australian Electoral Commission measures voter turnout as votes cast as a proportion of registered voters and this measure is used in this essay. The voter turnout indicator refers to turnout for national parliamentary elections.



a) Electoral terms and election timetables vary between countries. The data presented for voter turnout is for the most recent national parliamentary election held in a country, for which data is available, and the election held as close to 10 years before that.

(b) Earlier data are for 1988.

Source: *International Institute for Democracy and Electoral Assistance (IDEA) Voter Turnout Database, 2005.*²⁶

In the most recent Australian Federal parliamentary elections of 2004, voter turnout was 94%, the second highest of all OECD countries. However, this was slightly lower than the voter turnout of 96% in the 1993 parliamentary election.

Belgium currently has the highest voter turnout rate of all OECD countries with 96% of registered voters casting a vote in the parliamentary elections of 2003. The lowest turnout was recorded in Poland with 46% of registered voters voting in the parliamentary elections of 2001.

The compulsory or voluntary nature of voting in different countries is one factor that may influence voter turnout. Belgium and Australia are countries with long histories of compulsory voting, with compulsory voting introduced in 1892 in Belgium and 1924 in Australia. Australia and Belgium are also two of a small number of countries that have strict enforcement of compulsory voting. A strong association has been demonstrated between the level of enforcement of compulsory voting and voter turnout.²⁵ This is likely to be a contributing influence to consistently high voter turnout in Australia and Belgium over time.

High levels of political freedom and civil liberties are also considered to be factors that may contribute to the level

of voter turnout.²⁷

Most OECD countries have experienced a decline in voter turnout in elections held over the past decade or so. The largest declines in voter turnout occurred in the Czech Republic, Korea and United Kingdom. Voter turnout in the Czech Republic declined from 85% in 1992 to 58% in 2002. Voter turnout in Korea declined between 1988 and 2000 from 76% to 57%, while in the United Kingdom voter turnout between 1991 and 2001 declined from 78% to 59%. The low turnout for the 2001 election in the United Kingdom has been attributed to a number of factors such as the failure of the election campaign to connect with the electorate, a perception on the part of some voters that voting was irrelevant and would not make a difference, and the absence of a co-ordinated national campaign to encourage voting.²⁴

The United States has experienced the largest increase in voter turnout, with turnout increasing from 56% in 1990 to 64% in 2000. A number of other countries have experienced a modest increase in voter turnout during this period. Small increases in voter turnout were recorded in Poland (from 43% in 1991 to 46% in 2001), Denmark (from 83% in 1990 to 87% in 2001) and Belgium (from 93% in 1991 to 96% in 2003).

Among OECD countries are a number of countries which have moved to a democratic system of government relatively recently. The first parliamentary elections were held in Poland in 1989, and in 1990 for the Czech Republic and the Slovak Republic. The voter turnout for the first parliamentary elections in these countries was considerably higher than the turnout in more recent parliamentary elections. Some argue that social conditions, such as high levels of inequality and distrust of political institutions, sometimes observed in newer democracies, can influence electoral participation.²⁸

ENDNOTES

1. AIHW 2004, **National Report on Health Sector Performance Indicators 2003: A report to the Australian Health Ministers' Conference**, National Health Performance Committee, Canberra.
2. Australian Bureau of Statistics and Australian Institute of Health and Welfare 2005, **The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples**, Cat. no. 4704.0, ABS Canberra.
3. Organisation for Economic Cooperation and Development 2005, **OECD in Figures: Statistics on the member countries 2005 edition**, OECD, Paris.
4. Organisation for Economic Cooperation and Development 2005, **OECD Factbook: Economic, Environmental and Social Statistics**, OECD Paris.
5. Organisation for Economic Cooperation and Development 2005, **Education at a Glance: OECD Indicators 2005**, OECD, Paris.
6. Organisation for Economic Cooperation and Development 2006, **National Accounts of OECD Countries, volume 1**, OECD, Paris.
7. Household final consumption expenditure excludes purchases of dwellings, but includes imputed rent for owner-occupied dwellings. It also includes payments and fees to governments to obtain permits and licences.
8. Australian Bureau of Statistics 2000, **Australian System of National Accounts: concepts, sources and methods**, Cat. No. 5216.0, ABS, Canberra.
9. Organisation for Economic Cooperation and Development 2006, **OECD National Accounts of OECD Countries**, OECD Statistics On-line Database, 2006.
10. Organisation for Economic Cooperation and Development 2005, **Alternative measures of wellbeing, Working Party No.1 on Macroeconomic and Structural Policy Analysis**, Economic Policy Committee, OECD, Paris.
11. Australian Bureau of Statistics 2003, **Australian System of National Accounts 2002–03**, Cat. no. 5204.0, ABS Canberra.
12. Organisation for Economic Cooperation and Development 2004, **Comparison of household saving ratios: Euro Area/United States/Japan, Statistics Brief**, OECD, Paris.
13. International Labor Organisation 2005, **The Key Indicators of the Labour Market**, last viewed 26 March 2009. <<http://www.ilo.org>>
14. European Foundation for the Improvement of Living and Working Conditions 2002, Poland – **The dynamics of unemployment from 1990–2002**, <<http://www.eurofound.europa.eu/eiro/2002/10/feature/pl0210110f.htm>> Last viewed 26 March 2009
15. Organisation for Economic Cooperation and Development 2005, **Environment at a Glance: OECD Environmental Indicators 2005**, OECD, Paris.
16. Mulongoy, K.J., and Chape, S. 2004, **Protected areas and biodiversity: An overview of key issues**, UNEP World Conservation Monitoring Centre, Cambridge, UK.
17. Chape, S., Harrison, J., Spalding, M., and Lysenko, I. 2005, 'Measuring the extent and effectiveness of protected areas as an indicator for meeting global biodiversity targets', in **Philosophical Transactions of the Royal Society**, 360, 443–455.
18. International Energy Agency 2004, **Renewable Energy: Market and Policy Trends in IEA Countries**,

OECD, Paris. IEA member countries: Australia, Austria, Belgium, Canada, The Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, The Republic of Korea, Luxembourg, The Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, The United Kingdom, The United States.

19. Department of the Prime Minister and Cabinet (DPMC) 2004, **Securing Australia's energy future, Government White Paper on Energy Policy**, DPMC, Canberra.
20. Department of the Environment, Water, Heritage and the Arts, **Renewable Energy: Programmes and Resources** <<http://www.environment.gov.au/settlements/renewable/index.html>> Last viewed 26 March 2009
21. Productivity Commission 2005, **Waste Generation and Resource Efficiency: Productivity Commission Issues Paper December 2005**, Productivity Commission, Canberra.
22. Matsunaga, K., and Themelis, N.J., 2002, **Effects of affluence and population density on waste generation and disposal of municipal solid wastes**, Earth Engineering Centre, Columbia University, New York.
23. International Institute for Democracy and Electoral Assistance (IDEA), **Democracy Assessment: The Basics of the International IDEA Assessment Framework**, <http://www.idea.int/publications/sod/upload/demo_ass_inlay_eng_L.pdf> Last viewed 26 March 2009
24. The Electoral Commission 2001, **Election 2001: The Official Results**, The Electoral Commission, London, U.K.
25. International Institute for Democracy and Electoral Assistance 2002, **Compulsory Voting, in Voter Turnout since 1945: A Global Report**, IDEA, Stockholm, Sweden.
26. International Institute for Democracy and Electoral Assistance 2005, **Voter Turnout**, <<http://www.idea.int/vt/>> Last viewed 18 November 2005
27. International Institute for Democracy and Electoral Assistance 2002, **Voter Turnout Rates from a comparative perspective, in Voter Turnout since 1945: A Global Report**, IDEA, Stockholm, Sweden.
28. International Institute for Democracy and Electoral Assistance 2002, **Political Participation in New and Old Democracies, in Voter Turnout since 1945: A Global Report**, IDEA, Stockholm, Sweden.

This page last updated 30 April 2009

© Commonwealth of Australia

All data and other material produced by the Australian Bureau of Statistics (ABS) constitutes Commonwealth copyright administered by the ABS. The ABS reserves the right to set out the terms and conditions for the use of such material. Unless otherwise noted, all material on this website – except the ABS logo, the Commonwealth Coat of Arms, and any material protected by a trade mark – is licensed under a Creative Commons Attribution 2.5 Australia licence